

Remarks

Claim Rejections Under 35 USC 112

Claims 1-16 are rejected under 35 USC 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

The claims are amended to overcome the rejections under 35 USC 112, as set forth in the Office Action.

Claim Amendments

It should be noted that claim 1 is amended to clarify that the drilling tool is designed for drilling metals. Further, the features of now cancelled claim 5, namely a centering cone that has cutting edges that are relief ground in a positive manner at least in portions, are now included in amended claim 1. Applicant's invention includes the feature of a centering cone that has three lips and cutting edges that are relief ground.

The subject matter of amended claim 1 is neither anticipated nor obvious compared to the cited prior art. It is respectfully believed that the present submission places the claims in condition for allowance, from the standpoint of all rejections.

Claim Rejections under 35 USC 102

Claims 1-3 and 6 are rejected under 35 USC 102(b) as being anticipated by Yousem '218.

Claims 1-6 and 10-13 are rejected under 35 USC 102(b) as being anticipated by Maier '389.

Claims 1 and 2 are rejected under 35 USC 102(b) as being anticipated by Moon '563.

Valid rejection under 35 USC 102 requires that each feature of a rejected claim be disclosed in a single reference. “For anticipation under 35 USC 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present.” MPEP 706.02(a).

Respectively, neither Yousem, nor Maier, nor Moon disclose each feature of the rejected claims in a single reference. Therefore, Applicant respectfully maintains that the rejections under 35 USC 102 are inappropriate and the claims, as amended, overcome the rejections under 35 USC 102.

Claim Rejections Under 35 USC 103(a)

Valid rejection under 35 USC 103(a) requires evidence of a suggestion or motivation for one skilled in the art to combine prior art references to produce the claimed invention. US Court of Appeals for the Federal Circuit (*Ecolchem inc. v Southern California Edison Co., Fed. Cir., No. 99/1043, 9/7/00*).

The best defense against hindsight-based obviousness analysis is the rigorous application of the requirement for showing a teaching or motivation to combine the prior art references, according to the court.

The cited references do not motivate or suggest to one skilled in the art to combine these references to produce Applicant’s claimed invention.

Court of Appeals for the Federal Circuit confirmed the above principles in *In Re Sang-Su Lee* (00-1158). The court analyzed 35 USC 103 requirements starting from the Administrative Procedure Act and held (citations omitted):

“Tribunals of the PTO are governed by the Administrative Procedure Act, and their rulings receive the same judicial deference as do tribunals of other administrative agencies.

“The Administrative Procedure Act, which governs the proceedings of administrative agencies and related judicial review, establishes a scheme of “reasoned decision making.” Not only must an agency’s decreed result be within the scope of its lawful authority, but the process by which it reaches that result must be logical and rational.

“As applied to the determination of patentability vel non when the issue is obviousness, it is fundamental that rejections under 35 USC §103 must be based on evidence comprehended by the language of that section. (Emphasis added). When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness. (Emphasis added)

“The factual inquiry whether to combine references must be thorough and searching. It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with. Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. There must be some motivation, suggestion or teaching of the desirability of making the specific combination that was

made by the Applicant. Teachings of references can be combined only if there is some suggestion or incentive to do so.”

Discussion of Prior Art Rejections

Yousem discloses a pipe cleaning tool, rather than a drilling tool, i.e., a tool for drilling holes into a solid material. In particular, the tool Yousem discloses certainly is not a drilling tool for drilling metals.

None of the centering cones of Maier’s drilling tools projects from an area described by the cutting edges. Even in the embodiment shown in Figs. 6 to 8, the area described by the main cutting edges is a cone. The tip of this cone is obtained by elongating the main cutting edges towards the center axis. Clearly, the tip of the cone that is described by the main cutting edges lies above the centering cone 36. The same also holds for the embodiment as depicted in Figs 2 to 5.

Maier discloses that a centering spur that is located rearward of the common plane in which the main cutting edges are located, and is especially suited for drilling holes into hard workpieces (see col. 6, lines 29-37). In contrast to Maier, claim 1 of the present invention recites that a drilling tool for drilling metals, i.e., hard materials, has a centering cone projecting from the area defined by the main cutting edges. Moreover, the centering cone of the embodiment shown in Maier’s Figs. 6 to 8 obviously does not have cutting edges relief-ground in a positive manner (see Fig. 8 showing a pyramid-like cone that rather scrapes that cuts into the material to be drilled).

In regard to the reference to Moon, amended claim 1 includes the features of claim 5. Therefore, Applicant respectfully believes that the objections with respect to Moon are overcome with the amendment to claim 1. Further, in contrast to the opinion

set forth in the Office Action, Moon discloses a cutter rather than a drilling tool. In a drilling operation, the drilling tool is moved in an axial direction. In a cutting operation, the cutting tool is moved in a sideward direction. Therefore, since a cutting operation and a drilling operation are considerably different, a person skilled in the art would not adopt features of a cutter to design a drilling tool. Particularly, Applicant respectfully does not agree with the Office Action's interpretation regarding the centering cone. As opposed to the present invention, none of the tools shown in Moon's figures exhibit a centering cone projecting from an area that is described by the cutting edges by rotation of the drilling tool about its shank axis, as in the present invention. In Moon, Figure 1B shows the cross section of the profile that is cut with the tool as shown in Figs. 1A and 1C. As is apparent from Fig. 1B, the profile has a planar base area. If there was a projecting centering cone, there would be a further recess in the center of the profile. Given the absence of such a recess, it is apparent from Fig. 1B that Moon's cutting tool does not feature a projecting cone. The triangular structure at the end of the cutting tool as shown in Fig. 1C is not a center cone, but results from cutting edge pairs defining different cutting planes. In the embodiment shown in Figs. 1A to 1C, the flutes 20 define a plane of cut that is displaced backwards with respect to the plane of cut of flutes 16. In other words, the main cutting edges of the cutting tool shown in Figs. 1A to 1C are arranged at different heights with respect to the shank axis. The triangular structure at the tip of the tool merely results from the side view to the lips defining different cutting planes. Furthermore, in the embodiment of Figs. 1A to 1C, there is no plane area defined by at least three cutting edges, as defined in claim 2 of the present invention. Rather, there are two cutting planes, each defined by only two cutting edges, i.e., a first plane

defined by the two cutting edges of lips 16 and a further plane defined by the two cutting edges of lips 20.

Similarly, Applicant respectfully does not agree with regard to the rejection over Hageman in view of Maier. Amended claim 1 defines a drilling tool for drilling metals. In contrast, Maier discloses a drilling tool designed for drilling holes into comparably soft or brittle materials, such as reinforcing glass fiber or carbon fiber (for example, see col. 4, lines 25 to 30). Particularly, Maier teaches that a drilling tool with more than two lips having a center spur with its tip located forward of the inner cutting points of the main cutting edges is only suitable for drilling soft materials (see col. 7, lines 55-66). A person skilled in the art would not take Maier into account to modify the spot-weld removal tool disclosed in Hageman, which is intended for drilling tough sheet metals.

Summary

For anticipation under 35 USC 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present. The cited art does not teach every aspect of the claimed invention. Therefore, the present invention is not anticipated by the cited prior art.

In regard to the rejections under 35 USC 103, the cited references do not motivate or suggest to a person skilled in the art to combine these references to duplicate the claims of the present invention. Therefore, the present invention is not obvious and is patentable over the cited prior art.

Applicant respectfully believes that the present amendment places the claims in condition for allowance and does not add new matter.

Wherefore, further consideration and allowance of the claims, as amended, is respectfully requested.

A two-month extension of time in which to respond to the outstanding Office Action is hereby requested. A PTO 2038 in the amount of \$225 is enclosed for the prescribed Small Entity two-month extension fee.

Respectfully submitted,



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I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on February 23, 2006.



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